

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
14 February 2002 (14.02.2002)

PCT

(10) International Publication Number
WO 02/011707 A3

- (51) International Patent Classification⁷: **A61K 31/04**,
A61P 13/00, A61K 31/216, 31/416, 31/472, 31/137,
31/4409, 31/352, 31/44, 31/519, 31/453, 31/215
- (74) Agents: **SAMA, Daniele et al.**; Sama Patents, Via G.B.
Morgagni 2, I-20129 Milano (IT).
- (81) Designated States (*national*): AE, AG, AL, AU, BA, BB,
BG, BR, BZ, CA, CN, CR, CU, CZ, DM, DZ, EE, GD, GE,
HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV,
MA, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK,
TR, TT, UA, US, UZ, VN, YU, ZA.
- (21) International Application Number: PCT/EP01/08734
- (22) International Filing Date: 27 July 2001 (27.07.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,
CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,
TG).
- (30) Priority Data:
MI2000A 001848 8 August 2000 (08.08.2000) IT
- (71) Applicant (*for all designated States except US*): **NICOX**
S.A. [FR/FR]; 1900, rue des Crêtes, F-06560 Sophia An-
tipolis (FR).
- Published:
— with international search report
- (88) Date of publication of the international search report:
5 December 2002
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **DEL SOLDATO**,
Piero [IT/IT]; Via Toti, 22, I-20052 Monza (IT). **BENE-
DINI, Francesca** [IT/IT]; Via Padova, 286, I-20100 Mi-
lano (IT).
- For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*



WO 02/011707 A3

(54) Title: DRUGS FOR INCONTINENCE

(57) Abstract: Use in the incontinence of one or more of the following classes of drugs selected from the following: B) salified and non salified nitric oxide-donor drugs, of formula: A - X₁ - N(O)₂, B') nitrate salts of drugs used for the incontinence, and which do not contain in the molecule a nitric oxide donor group; C) organic or inorganic salts of compounds inhibiting phosphodiesterases.

INTERNATIONAL SEARCH REPORT

Int. Application No
PCT/EP 01/08734

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K31/04 A61P13/00 A61K31/216 A61K31/416 A61K31/472
A61K31/137 A61K31/4409 A61K31/352 A61K31/44 A61K31/519
A61K31/453 A61K31/215

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, CHEM ABS Data, MEDLINE, EMBASE, PASCAL

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 09948 A (NICOX SA ;DEL SOLDATO PIERO (IT); SANNICOLA FRANCESCO (IT)) 12 March 1998 (1998-03-12) cited in the application * see in particular p. 45, l. 10 - p. 47, l. 7; claim 1 *	12,14,15
X	WO 96 37202 A (ALZA CORP) 28 November 1996 (1996-11-28) * see in particular p. 3, l. 22-24; p. 5, l. 8-11; claim 2 *	12,14,15

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

22 July 2002

Date of mailing of the international search report

02.07.02

Name and mailing address of the ISA

European Patent Office, P.B. 6818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Rodriguez-Palmero, M

INTERNATIONAL SEARCH REPORT

 International Application No
 PCT/EP 01/08734

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	LINDSTROM, LEIF H.: "Effect of pilocarpine and oxotremorine on hormone-activated copulatory behavior in the ovariectomized hamster" NAUNYN-SCHMIEDEBERG'S ARCH. PHARMACOL. (1972), 275(3), 233-41 , XP001055429 * see in particular p. 235, first paragraph; p. 239, first paragraph of the discussion *	12,14,15
E	WO 01 89473 A (SCHLYTER JIMMY HIRSCHSPRUNG ;SCHULTZ ANN CHRISTINA (DK); SUNDGREEN) 29 November 2001 (2001-11-29) * see in particular claims 6 and 59 *	12,14,15
P,X	US 6 203 817 B1 (JOHNSON JUANITA A ET AL) 20 March 2001 (2001-03-20) * see in particular column 14, table 4; column 15, table 5 *	12,14,15
X	WO 99 67231 A (NICOX SA ;DEL SOLDATO PIERO (IT)) 29 December 1999 (1999-12-29) * see in particular p. 2, l. 23 - p. 3, l. 5; p. 12, l. 11 and 12; p. 18, l. 18-21; p. 29, example 3; p. 33, example 10; p. 44, examples 16 and 17; claims 3, 4 and 6 *	12,14,15
X	GB 2 330 579 A (GHARDA CHEMICALS LIMITED) 28 April 1999 (1999-04-28) * see in particular claim 4 *	12,14
P,X	EP 1 092 719 A (PFIZER LTD ;PFIZER (US)) 18 April 2001 (2001-04-18) * see in particular p. 2, paragraph 1; p. 3, paragraphs 6 and 7; p. 12, paragraph 41 *	13-15
X	DE 195 40 642 A (STIEF CHRISTIAN GEORG PRIV DOZ) 7 May 1997 (1997-05-07) * see in particular column 2, l. 23 - column 3, l. 29; claims *	14
X	EP 1 020 190 A (PFIZER PROD INC) 19 July 2000 (2000-07-19) * see in particular p. 2, paragraph 3; p. 3, paragraph 10 and 15; p. 4, paragraph 16; p. 9, paragraph 43; claims 21, 24 and 25 *	14
X	US 5 525 604 A (LEE SUNG J ET AL) 11 June 1996 (1996-06-11) * see in particular column 44, example 1(bb) *	14

-/-

INTERNATIONAL SEARCH REPORT

In original Application No

PCT/EP 01/08734

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 436 233 A (LEE SUNG J ET AL) 25 July 1995 (1995-07-25) * see in particular column 18, table 1 and column 80, example 18 *	14
X	WO 96 28448 A (SANOFI WINTHROP INC) 19 September 1996 (1996-09-19) * see in particular p. 12, l. 4-35; p. 17, example 6 *	14
X	EP 0 943 613 A (KYOWA HAKKO KOGYO KK) 22 September 1999 (1999-09-22) * see in particular p. 3, paragraph 1; p. 5, paragraph 22 *	13
P,X	WO 00 51988 A (NICOX SA ;DEL SOLDATO PIERO (IT); BENEDINI FRANCESCA (IT)) 8 September 2000 (2000-09-08) * see in particular examples 1-8, 13 and 14 *	14
A	SULLIVAN J ET AL: "Pharmacological management of incontinence." EUROPEAN UROLOGY, vol. 36, no. SUPPL. 1, June 1999 (1999-06), pages 89-95, XP001094443 Pre-Congress Satellite Symposium on α_1 -Adrenoceptors as Targets for Therapeutic Agents in Urology in connection with the XIIIth Congress of Pharmacology; Paris, France; Munich, Germany; July 23-24, 1998; July 26, 1998 ISSN: 0302-2838 * see in particular p. 89, right column, 3rd paragraph; p. 92, left column, 2nd last paragraph *	12-15

INTERNATIONAL SEARCH REPORT

.....national application No.
PCT/EP 01/08734

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 1-11
because they relate to subject matter not required to be searched by this Authority, namely:
The present claims 1-11 concern subject-matter considered by this Authority to be covered by the provisions of Rule 39.1(iv) PCT and have therefore not been searched.
2. ☒ Claims Nos.: 12-15 (all of them partially)
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

As a result of the prior review under R. 40.2(e) PCT,
no additional fees are to be refunded.

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☒ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claim : 12; 14 and 15 (partially)

Nitrate salts of drugs used for the incontinence and which do not contain in the molecule a nitric oxide donor group, formulations containing them and their use as a medicament.

2. Claim : 13; 14 and 15 (partially)

Organic or inorganic salts of compounds inhibiting phosphodiesterases, formulations containing them and their use as a medicament.

3. Claim : 14 (partially)

Formulations containing nitric oxide donor drugs, salified and non salified of formula $A-X1-N(O)_z$ as defined in claim 1 of the present application.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 12-15 (all of them partially)

Present claims 12-15, as far as they depend on claims 1 and 6, relate to an extremely large number of possible compounds or formulations. The term "drugs used for the incontinence" used in claim 1 encompasses an unlimited group of compounds, which is permanently changing, so that a complete search is impossible. In fact, the claims contain so many options that a lack of conciseness within the meaning of Article 6 PCT arises. The same reasoning applies *mutatis mutandis* for the functional terms used in claim 6 for the groups B'1-B'9 and B'11 and in claim 1 for group C. Consequently, the search of claims 12-15 has been carried out for those parts of the application which do appear to be concise, namely for the concrete compounds mentioned in claims 6 (group B'10), 7 and 8.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

 International Application No
 PCT/EP 01/08734

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9809948	A	12-03-1998	IT MI961821 A1	04-03-1998
			AU 729533 B2	01-02-2001
			AU 4301097 A	26-03-1998
			BR 9712008 A	24-08-1999
			CN 1234792 A	10-11-1999
			WO 9809948 A2	12-03-1998
			EP 0931065 A2	28-07-1999
			JP 2000517332 T	26-12-2000
WO 9637202	A	28-11-1996	US 5674895 A	07-10-1997
			AU 695194 B2	06-08-1998
			AU 5639296 A	11-12-1996
			AU 718849 B2	20-04-2000
			AU 9052298 A	14-01-1999
			BE 1009462 A3	01-04-1997
			CA 2218714 A1	28-11-1996
			CH 690955 A5	15-03-2001
			DE 19681389 T0	23-04-1998
			FR 2734483 A1	29-11-1996
			GB 2318055 A ,B	15-04-1998
			IT T0960427 A1	21-11-1997
			JP 11505264 T	18-05-1999
			NL 1003185 C2	03-12-1996
			NL 1003185 A1	25-11-1996
			NZ 307116 A	29-03-1999
			US 6124355 A	26-09-2000
			WO 9637202 A1	28-11-1996
			US 6262115 B1	17-07-2001
			US 5840754 A	24-11-1998
			US 2001005728 A1	28-06-2001
			US 5912268 A	15-06-1999
WO 0189473	A	29-11-2001	AU 4638901 A	15-10-2001
			AU 6008901 A	03-12-2001
			WO 0174335 A1	11-10-2001
			WO 0189473 A1	29-11-2001
US 6203817	B1	20-03-2001	NONE	
WO 9967231	A	29-12-1999	IT MI981408 A1	20-12-1999
			AU 4513999 A	10-01-2000
			BR 9911305 A	23-10-2001
			CN 1315945 T	03-10-2001
			WO 9967231 A1	29-12-1999
			EP 1087953 A1	04-04-2001
			HU 0102719 A2	28-12-2001
GB 2330579	A	28-04-1999	FR 2770519 A1	07-05-1999
EP 1092719	A	18-04-2001	BR 0004779 A	29-05-2001
			EP 1092719 A2	18-04-2001
			JP 2001151778 A	05-06-2001
DE 19540642	A	07-05-1997	DE 19540642 A1	07-05-1997
EP 1020190	A	19-07-2000	AU 5597799 A	04-05-2000
			EP 1020190 A2	19-07-2000
			HU 9903732 A2	28-08-2000

INTERNATIONAL SEARCH REPORT

In International Application No

PCT/EP 01/08734

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1020190	A		JP 2000128804 A	09-05-2000
US 5525604	A	11-06-1996	AT 163647 T	15-03-1998
			CA 2130878 A1	27-02-1995
			CN 1109055 A	27-09-1995
			DE 69408750 D1	09-04-1998
			DE 69408750 T2	23-07-1998
			DK 640599 T3	28-09-1998
			EP 0640599 A1	01-03-1995
			ES 2114662 T3	01-06-1998
			JP 7089958 A	04-04-1995
			KR 204433 B1	15-06-1999
US 5436233	A	25-07-1995	AT 208771 T	15-11-2001
			CA 2100626 A1	16-01-1994
			DE 69331122 D1	20-12-2001
			DE 69331122 T2	20-06-2002
			DK 579496 T3	25-02-2002
			EP 0579496 A1	19-01-1994
			ES 2167325 T3	16-05-2002
			JP 2657760 B2	24-09-1997
			JP 6192235 A	12-07-1994
			JP 2923742 B2	26-07-1999
			JP 8099962 A	16-04-1996
			US 5439895 A	08-08-1995
			KR 191416 B1	15-06-1999
WO 9628448	A	19-09-1996	AU 708809 B2	12-08-1999
			AU 5093396 A	02-10-1996
			CA 2211729 A1	19-09-1996
			CZ 9702806 A3	15-04-1998
			EP 0813534 A1	29-12-1997
			HU 9801394 A2	28-10-1998
			JP 11501926 T	16-02-1999
			NO 974150 A	07-11-1997
			NZ 303886 A	25-11-1998
			PL 322452 A1	02-02-1998
			US 5958929 A	28-09-1999
			WO 9628448 A1	19-09-1996
			US 5736548 A	07-04-1998
			ZA 9601948 A	17-09-1996
EP 0943613	A	22-09-1999	AU 4967697 A	10-06-1998
			EP 0943613 A1	22-09-1999
			WO 9822455 A1	28-05-1998
WO 0051988	A	08-09-2000	IT MI990413 A1	04-09-2000
			AU 3158800 A	21-09-2000
			BR 0008582 A	13-02-2002
			CN 1342147 T	27-03-2002
			WO 0051988 A1	08-09-2000
			EP 1154999 A1	21-11-2001